

## 9 point Drilling Plan Check List

### BLM Blank Field Office

Operator:

Operator Name

Date: **9/16/2010**

Well Name/Number:

Joe Creek 4-26-4-12

Location:

NENE 26-T4S-R12W USB

Lease Number:

UTU-88666

Agreement Name (If Applicable):

N/A

**APD CHECKLIST**ONSHORE ORDER NO. 1 (2007), III.D. *COMPONENTS OF A COMPLETE APD PACKAGE***3. DRILLING PLAN:**

Information Required	Rec'd w/APD	Not w/ APD	Information Incomplete	Date Subsequent Info Rec'd	Remarks	<b><u>OK?</u></b>
a. Estimated tops of geologic markers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<b>PBR</b>
b. Estimated tops and bottoms of water, oil, gas or other minerals and protection measures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
c. Pressure control equipment, schematic, and testing procedures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
d. Casing program - size, grade, weight, thread and coupling, setting depth, condition & design criteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
e. Cement program - amount, type, additives, stage-cementing, linear fill-up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
f. Circulating medium - quantities, types, weighting material, and monitoring equipment (air/gas).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
g. Testing, logging, and coring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
h. Expected BHP, abnormal BHP or T, or potential hazards (H <sub>2</sub> S DOP & PPP).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
i. Other facets (directional, horizontal or coil tubing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

**SUPPLEMENTAL CHECKLIST:**

Information Required	Rec'd w/APD	Not w/ APD	Information Incomplete	Date Subsequent Info Rec'd	Remarks	<b><u>OK?</u></b>
Status of POD and DOA for wells in Federal units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<b>n/a</b>
Other information required by Orders and Notices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<b>n/a</b>

**Operator:** Operator Name  
**Well Name/Number:** Joe Creek 4-26-4-12  
**Location:** NENE 26-T4S-R12W USB  
**Lease Number:** UTU-88666  
**Agreement Name (If Applicable):** N/A

**Date:** 9/16/2010

APD REQUIREMENTS FOR H<sub>2</sub>S (Onshore Order No. 6, Hydrogen Sulfide Operations )

Item	Information Required	Rec'd w/APD	Not w/APD	Information Incomplete	Date Subsequent Info Rec'd	OK for Approval	COA?
1)	The authorized officer shall be notified when operations are 500 feet above or 3 days before (whichever is earlier) drilling the first formation expected to contain H <sub>2</sub> S.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
2)	Submit the concentration of H <sub>2</sub> S in the gas stream that is anticipated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
3)	A copy of the Drilling Operations Plan (DOP) shall be available during operations at the wellsite beginning 500 feet above or 3 days before (whichever is earlier) drilling the first formation expected to contain H <sub>2</sub> S.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
4)	A Public Protection Plan (PPP) providing details of actions necessary to alert and protect the public in the event of a release of a potentially harmful volume of H <sub>2</sub> S shall be submitted to the authorized officer for drilling or producing operations when applicability criteria of Order No. 6 are met.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
5)	A copy of the PPP shall be available at the drilling and/or completion site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
6)	H <sub>2</sub> S DOP and PPP shall be reviewed by the operator on an annual basis and copy of any necessary revisions shall be submitted to the authorized officer upon request.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
7)	If unanticipated H <sub>2</sub> S in excess of 100 ppm in the gas stream is encountered, the operator shall immediately ensure control of the well, suspend drilling operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with the applicable provisions of Order No. 6. In addition, the operator shall notify the authorized officer of the event and the mitigating steps that have or are being taken, as soon as possible, but no later than the next business day. If said notifications are subsequent to actual resumption of drilling operations, the operator shall notify the authorized officer of the date that drilling was actually resumed. It is the operator's responsibility to provide, if necessary, a H <sub>2</sub> S DOP and a PPP to the authorized officer for approval within five business days following resumption of drilling ahead operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA

H<sub>2</sub>S DRILLING OPERATIONS PLAN (DOP) LIST

Item	The Following Information is Required to be Submitted in a H <sub>2</sub> S PPP from Drilling, Completion, Workover and Production Operations, When Concentrations of 100 ppm (and Greater) of H <sub>2</sub> S in the Gas Stream Are Present and at Least One of the Applicability Criteria in Section III.B.1 Applies	Rec'd w/APD	Not w/APD	Information Incomplete	Date Subsequent Info Rec'd	OK for Approval	COA?
a.	Training of personnel in H <sub>2</sub> S.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
b.	Well site diagram, depicting:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	i. Drill rig orientation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii. Prevailing winds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iii. Terrain of surrounding areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iv. Location of briefing areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	v. Location of access roads (including secondary egress).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	vi. Location of flare lines and pits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	vii. Location of caution/danger signs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	viii. Location of wind indicators.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
c.	Description of H <sub>2</sub> S safety equipment/system, including:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	i. Well control equipment:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	- Flare Line(s) and means of ignition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	- Remote controlled choke.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	- Flare gun/flares.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

		- Mud gas separator and rotating head (if exploratory).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii.	Protective equipment for essential personnel:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Location, type, storage and maintenance of escape breathing apparatus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Means of communication when using protective breathing apparatus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iii.	H <sub>2</sub> S detection and monitoring equipment:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- H <sub>2</sub> S sensors and audible/visual alarms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Portable H <sub>2</sub> S and SO <sub>2</sub> monitors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iv.	Visual warning systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Wind direction indicator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Caution/danger signs and flags.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	v.	Mud program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Mud system and additives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
		- Mud degassing program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	vi.	Metallurgical properties of all tubular goods and well control equipment which could be exposed to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	vii.	Means of communication from wellsite.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	d.	Plans for well testing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA

### H<sub>2</sub>S PUBLIC PROTECTION PLAN (PPP) LIST

Item	Information Required to be Submitted in a H <sub>2</sub> S DOP From Drilling and Completion Operations When Concentrations of 100 ppm (and Greater) of H <sub>2</sub> S in the Gas Stream Are Present	Rec'd w/APD	Not w/APD	Information Incomplete	Date Subsequent Info Rec'd	OK for Approval	COA?
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> This H <sub>2</sub> S PPP is for: this APD only, all APDs, all producing wells, this facility only, all facilities. Is the concentration of H <sub>2</sub> S in the gas stream that is anticipated submitted. Does the operator indicate if this amount is expected to vary in the field? List the specific condition(s) in Section III.B.1 which is exceeded (along with the exceedance amount) that requires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
a.	Responsibilities and duties of key personnel and instructions for alerting public and requesting assistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
b.	List of names, telephone numbers of:						
	i. Residents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii. Individuals responsible for safety of public roadways.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iii. Individuals responsible for safety of occupants of buildings within the 100 ppm ROE.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
c.	Telephone call list for:						
	i. Requesting assistance from law enforcement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii. Fire department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iii. Medical personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iv. Federal and State regulatory agencies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	v. Necessary information and emergency responses list.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
d.	100 ppm or 3000 feet ROE plat depicting all private or public dwellings, schools, roads, recreational areas, and other areas where the public might reasonably be expected to congregate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
e.	Advance briefings of persons identified in Item b. addressing:						
	i. Hazards of H <sub>2</sub> S and SO <sub>2</sub> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii. Necessity for emergency action plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iii. Possible sources of H <sub>2</sub> S and SO <sub>2</sub> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	iv. Instructions of reporting a leak to operator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	v. Manner in which the public will be notified of an emergency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	vii. Steps to be taken in case of emergency including evacuation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
f.	Guidelines for ignition of H <sub>2</sub> S bearing gas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	i. Designate the person who has the authority to ignite the escaping gas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii. Define when, how and by whom the gas will be ignited.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
g.	Additional measures following the release of H <sub>2</sub> S and SO <sub>2</sub> :						
	i. Monitoring of H <sub>2</sub> S and SO <sub>2</sub> levels and wind direction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA
	ii. Maintenance of site security and access control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/> Add COA

☐ Add COA

	iii.	Communication of status of well control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Add COA
	iv.	Other necessary measures as required by the authorized officer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Add COA
h.		For production facilities, a description of the detection systems utilized to determine the concentration of H <sub>2</sub> S released.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Add COA
		For each existing production facility, calculate and submit the 100 ppm and, if applicable, the 500 ppm radii of exposure (ROE) to determine if the Applicability Criteria in Section III.B.1 apply in submitting a H <sub>2</sub> S PPP.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/> Add COA

**Operator:** Operator Name  
**Well Name/Number:** Joe Creek 4-26-4-12  
**Location:** NENE 26-T4S-R12W USB  
**Lease Number:** UTU-88666  
**Agreement Name (If Applicable):** N/A

Date: **9/16/2010**

**Casing Mechanical Properties & Design:**

	Surface	Prod	N/A	N/A	N/A
Casing Size	9-5/8"	5-1/2"			
Casing Grade	K-55	J-55			
Weight of Pipe, #/ft	36.00	15.50			
Connection	STC	LTC			
Condition	New	New			
Top Setting Depth (MD), ft	0	0			
Top Setting Depth (TVD), ft	0	0			
Setting Depth (MD), ft	500	5,000			
Setting Depth (TVD), ft	500	5,000			
Max Mud Weight - Inside, ppg	8.50	9.50			
Max Mud Weight - Outside, ppg	8.50	9.50			
Desired Cement Top (MD), ft	0	0			
Desired Cement Top (TVD), ft	0	0			
Hydrostatic Inside (Dry Outside), psi	2210	2470			
Minimum Internal Yield, psi	3,520	4,810			
Burst Safety Factor	1.6	1.95			
Burst Review	OK	OK			
Hydrostatic Outside (Dry Inside), psi	221	2,470			
Collapse Resistance, psi	2,020	4,040			
Collapse Safety Factor	9.14	1.64			
Collapse Review	OK	OK			
Weight In Air, kips	18	78			
Overpull, Kips	100	70			
Body Yield, kips	564	248			
Joint Strength, kips	526	239			
Prevails ?	Joint	Joint			
Ratio - Weight/Body Yield	0.0	0.3			
Tension Safety Factor w/ Overpull	4.46	1.62			
Tension Review	OK	OK			

**valuation:**

Hole	Casing	Ann Vol	Lead		Tail		Cement Volume	Linear Fill-up	Percent	Review
			# Sx	Yield	#Sx	Yield				
12.250	9.625	0.3132	0	0	420	1.18	495.6	1582	316%	OK
7.875	5.500	0.1733	0	0	358	1.47	526.3	3038	61%	Concern
0.000	0.000	0.0000	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!
0.000	0.000	0.0000	0	0	0	0	0	#DIV/0!		OK

Casing Design Factors and Cement Volumes Acceptable w/ COA for Production cmt to protect/isolate.

Note:

Note: 20" conductor preset & cemented to 40'.

Review by: R. Allen McKee

Date: 9/16/10



# APD ENGINEERING EVALUATION

Operator: **Operator Name** Date: **9/16/2010**  
 Well Name/Number: **Joe Creek 4-26-4-12**  
 Location: **NENE 26-T4S-R12W USB**  
 Lease Number: **UTU-88666**  
 Agreement Name (If Applicable): **N/A**  
 Exploratory: ☐ YES ☒ NO (As defined by Order No 2, II, E.)

Item c.	<b>BLOWOUT PREVENTION EQUIPMENT (BOPE)</b>		
ABHP =	2080	psi	(Order No.1, Item H from Drilling Plan).
TVD =	5,000	feet	
Mud Wt =	9.50	ppg	(Order No.1, Item f for each drilled interval).
Operators Gradient =	0.42	psi/ft	Is Appropriate
		&	Does Coincide with Mud weights provided by the Operator.
The most credible ABHP =	2470	psi	
Rationale:	Coincides with mud weights (.052 x ppg x TVD). Offset data. Professional knowledge. Etc.		
		ASP = ABHP - (0.22 * TVD)	
		ASP = 1370 psi	
Proposed BOPE =	3	M (Order No.1 Item c from Drilling Plan) and	Exceeds ASP and therefore is Adequate.
Concerns:	None.		
<input type="checkbox"/> Add COA			
Item d.	<b>CASING PROGRAM</b>		
Casing setting depths <input checked="" type="checkbox"/> Are <input type="checkbox"/> Are Not across competent formations (See Items a & b and Geologic Report) and therefore <input checked="" type="checkbox"/> Are <input type="checkbox"/> Are Not appropriate. See Casing Design tab. Casing design <input checked="" type="checkbox"/> Is <input type="checkbox"/> Is Not adequate.			
Concerns:	None.		
<input type="checkbox"/> Add COA			
Item e.	<b>CEMENTING PROGRAM</b>		
All usable quality water (including sole source aquifers and drinking water source protection zones); prospectively valuable mineral and/or hydrocarbon zone as specified on the Geologic Report <input checked="" type="checkbox"/> Is <input type="checkbox"/> Is Not adequately isolated and/or protected. See Cement Evaluation Tab.			
Concerns:	Cement coverage behind 5-1/2" production pipe needs to isolate/protect usable quality water.		
<input type="checkbox"/> Add COA			
Item f.	<b>CIRCULATING MEDIUM (DRILLING FLUID / MUD PROGRAM)</b>		
Proposed drilling fluid and additive <input checked="" type="checkbox"/> Are <input type="checkbox"/> Are Not compatible with formations likely to be encountered. Air drilling operation <input checked="" type="checkbox"/> Are <input type="checkbox"/> Are Not proposed.			
Concerns:	Air operations proposed - Add Air package COAs.		
<input type="checkbox"/> Add COA			
Item g.	<b>TESTING, LOGGING, and CORING PROCEDURES</b>		
Adequate logs <input checked="" type="checkbox"/> Are <input type="checkbox"/> Are Not proposed (See Geologic Report). Cement bond evaluation tools <input type="checkbox"/> Are <input checked="" type="checkbox"/> Are Not proposed across critical zones. Special Drill Stem Tests <input checked="" type="checkbox"/> Are <input type="checkbox"/> Are Not proposed.			
Concerns:	(Freeform Box)		
<input type="checkbox"/> Add COA			
Item h.	<b>DRILLING HAZARDS</b>		
Abnormal BHPs or BHT <input type="checkbox"/> Are <input checked="" type="checkbox"/> Are Not anticipated. Potential hazards (Hydrogen Sulfide <input type="checkbox"/> Is <input checked="" type="checkbox"/> Is Not anticipated (see Items a & b and Geologic Report). DOP & PPP <input type="checkbox"/> Are <input checked="" type="checkbox"/> Are Not necessary.			
Concerns:	None.		
<input type="checkbox"/> Add COA			
Item i.	<b>OTHER FACETS</b>		
Directional, Horizontal or Coiled Tubing operation <input type="checkbox"/> Are <input checked="" type="checkbox"/> Are Not proposed. Directional design (plan view & vertical section) <input checked="" type="checkbox"/> Is <input type="checkbox"/> Is Not necessary.			
Concerns:	None.		
<input type="checkbox"/> Add COA			
<b>CORRELATIVE RIGHTS</b>			
This well <input checked="" type="checkbox"/> Is <input type="checkbox"/> Is Not drilled in conformance with a spacing pattern acceptable to the AO.			
Spacing Order No.	None - General State Spacing.		
Unit Name	N/A	Acknowledged by UT922 in POD or Memo?	Yes / No / NA.
Distance from Section Line =	(Freeform Box - Footages)		
Distance from Lease Line =	(Freeform Box - Footages)		
Distance from Unit Exterior	(Freeform Box - Footages)		
Concerns:	None.		
<input type="checkbox"/> Add COA			
<b>VARIANCES</b>			
All variances granted meet or exceed the minimum standards of Order(s) No. 1, 2 or 6.			
Concerns:	None requested - None Granted.		
<input type="checkbox"/> Add COA			
<b>RECOMMENDATION</b>			
In addition to the standard conditions, it is recommended to include the following specific COAs into this APD's approval:			COA ??
1	A <u>Field Office</u> petroleum engineer shall be contacted for a verbal approval prior to commencing remedial work, plugging operations on newly drilled boreholes, changes within the drilling plan, changes or variances to the BOPE, deviating from conditions of approval, and conducting other operations not specified within the APD. Please contact <u>          </u> for verbal approvals. As a secondary contact: <u>          </u> .		
<input type="checkbox"/> Add COA			
2	If a well control issue arises (e.g. kick, blowout, or water flow), casing failure occurs, or an increase in bradenhead pressure occurs during fracturing operations, the AO shall be notified within 24 hours from the time of the event.		
<input type="checkbox"/> Add COA			

3	The BOPE shall be installed, tested and operated in conformance with (to) Onshore Order #2 for a <b>M</b> system.	<input type="checkbox"/> Add COA	B O P E
4	For all 5M and Higher BOPE, an electrical/mechanical mud monitoring equipment shall be functional prior to drilling out the next shoe. As a minimum, this shall include a pit volume totalizer, stroke counter, and flow sensor.	<input type="checkbox"/> Add COA	
5	Gas detecting equipment shall be installed in the mud return system, prior to drilling out the _____ (next) shoe, and hydrocarbon gas shall be monitored for pore pressure changes.	<input type="checkbox"/> Add COA	
6	A gas buster shall be functional and all flare lines effectively anchored in place, prior to drilling out the _____ casing shoe. The discharge of the flare lines shall be a minimum of 100' from the well head and targeted at bends. The panic line shall be a separate line (not open inside the buffer tank) and shall be effectively anchored. All lines shall be downwind of the prevailing wind direction and directed into a flare pit, separate from the reserve pit. The flare system shall use an automatic ignition system. Where noncombustible gas is likely or expected, the system shall be provided supplemental fuel for ignition and maintain a continuous flare.	<input type="checkbox"/> Add COA	
7	Onshore Order No. 2, requires that all formations containing usable quality water (less than 10,000 ppm) be protected via cement. If encountered while drilling, usable quality water would require protection by bringing the cement at least ±200' above the usable quality water	<input type="checkbox"/> Add COA	C e m e n t i n g  /  E v a l
8	Onshore Order No. 2, <i>Drilling Operations</i> , requires that all formations containing usable quality water (less than 10,000 ppm) be protected via cement. If encountered while drilling below the surface casing shoe yet above the anticipated cement top for the <b>5-1/2" Production Casing</b> , usable quality water would require protection by bringing the cement at least ±200' above the usable quality water zone. Results (cementing reports, CBL, depth of flow, rate of flow, water quality, if available, etc.) will be reported to BLM. Any necessary remedial operations will be conducted prior to drilling out that casing shoe.	<input type="checkbox"/> Add COA	
9	As a minimum, cement shall be brought to 200' <b>above the _____ Formation</b> . Prior to commencing fracturing operations, a CBL shall be run (from TD to 200' above the TOC) and an electronic copy submitted to the AO. If the TOC is lower than required or the cement sheath of poor quality, then, within 48 hours from running the CBL and prior to commencing fracturing operations, a _____ <b>Field Office</b> petroleum engineer shall be notified for further instruction.	<input type="checkbox"/> Add COA	
10	After running and cementing the <b>5-1/2" Production Casing</b> , to determine cement top and quality a cement bond log, cement evaluation tool, or equivalent shall be run to determine cement top and quality. Results will be reported to BLM, attn: _____ <b>Field Office</b> petroleum engineer. Any necessary remedial operations will be conducted prior to drilling out of that casing shoe.	<input type="checkbox"/> Add COA	
11	Submit the (a) mud/drilling log (e.g. Pason disc), (b) driller's event log/operations summary report, (c) production test volumes, (d) directional survey, and (e) Formation Integrity Test results with the well completion report. Please contact the AO for clarification.	<input type="checkbox"/> Add COA	R e p o r t s
12	In accordance with 43 CFR 3162.4(b), the operator shall submit a complete set of electrical/mechanical logs in .LAS format or hard copy with standard Form 3160-4, Well Completion or Recompletion Report and Log. Please contact: _____ <b>(engineer's name)</b> .	<input type="checkbox"/> Add COA	
13	Two copies of all logs, and a single copy of core descriptions, core analyses, drill stem tests, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling and/or completion operations shall be submitted to the BLM, _____ <b>Field Office</b> .	<input type="checkbox"/> Add COA	
14	Daily drilling and completion progress reports shall be submitted to the BLM, _____ <b>Office</b> on a _____ <b>basis</b> , and shall include daily mud reports, details of casing that has been run and its cementing, water flows, lost circulation zones, hydrocarbon shows and other information that describes drilling conditions.	<input type="checkbox"/> Add COA	
15	Drill Stem Testing (DST) operations are proposed and shall conform to Onshore Oil and Gas Order No 2, III. D. DST Requirements.	<input type="checkbox"/> Add COA	H y d r o g e n
16	Air Drilling Operations are proposed and shall conform to Onshore Oil and Gas Order No 2, III. E.	<input type="checkbox"/> Add COA	
17	The authorized officer (AO) shall be notified when operations are 500 feet above or 3 days before (whichever is earlier) drilling the first formation expected to contain Hydrogen Sulfide (H <sub>2</sub> S).	<input type="checkbox"/> Add COA	
18	A copy of the Drilling Operations Plan (DOP) shall be available during operations at the wellsite beginning 500 feet above or 3 days before (whichever is earlier) drilling the first formation expected to contain H <sub>2</sub> S.	<input type="checkbox"/> Add COA	
19	A Public Protection Plan (PPP) providing details of actions necessary to alert and protect the public in the event of a release of a potentially harmful volume of H <sub>2</sub> S shall be submitted to the authorized officer for drilling or producing operations when applicability criteria of Order No. 6 are met.	<input type="checkbox"/> Add COA	S u l f i d e
20	A copy of the PPP shall be available at the drilling and/or completion site.	<input type="checkbox"/> Add COA	
21	H <sub>2</sub> S DOP and PPP shall be reviewed by the operator on an annual basis and copy of any necessary revisions shall be submitted to the authorized officer upon request.	<input type="checkbox"/> Add COA	
22	If unanticipated H <sub>2</sub> S in excess of 100 ppm in the gas stream is encountered, the operator shall immediately ensure control of the well, suspend drilling operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with the applicable provisions of Order No. 6. In addition, the operator shall notify the authorized officer of the event and the mitigating steps that have or are being taken, as soon as possible, but no later than the next business day. If said notifications are subsequent to actual resumption of drilling operations, the operator shall notify the authorized officer of the date that drilling was actually resumed. It is the operator's responsibility to provide, if necessary, a H <sub>2</sub> S DOP and a PPP to the authorized officer for approval within five business days following resumption of drilling ahead operations.	<input type="checkbox"/> Add COA	
23	No variances were requested nor approved from the minimum standards of Order Nos. 2, <i>Drilling Operations</i> and No. 6, <i>Hydrogen Sulfide Operations</i> .	<input checked="" type="checkbox"/> Add COA	V a r i a n c e s
26	Air Drilling Variances Granted: 1) Dust suppression equipment variance granted for water mist system to substitute for the dust suppression equipment. 2) Variance granted for blooie line discharge to be 75' from the well bore. 3) Variance granted for truck/trailer mounted air compressors. 4) Straight run blooie line variance granted for targeted "T's" at bends. 5) Automatic igniter variance granted for igniter due to water <del>prohibit</del>	<input type="checkbox"/> Add COA	
24	A formation integrity test shall be performed at the _____ casing shoe. Prior to drilling more than 20 feet below the shoe, the test shall expose the shoe to the minimum mud weight equivalent necessary to control anticipated pressure at the next casing point or total depth.	<input type="checkbox"/> Add COA <input type="checkbox"/> Add COA	L o g s
25	Gamma Ray Log shall be run from Total Depth to Surface.	<input type="checkbox"/> Add COA	
26	All cement bond logs shall be run by the logging company at zero pressure. Logs determined to be run under pressure shall be re-run.	<input type="checkbox"/> Add COA	
27	A _____ <b>Field Office</b> petroleum engineer shall be contacted for approval prior to running non-API Standard casing downhole. Please contact _____ with the specifications and manufacturer of the pipe, and a decision will be made whether the pipe can be used.	<input type="checkbox"/> Add COA	
28	Prior to running used or reconditioned API-grade casing downhole, a _____ <b>Field Office</b> petroleum engineer shall be contacted to obtain approval. Approval will be granted if the pipe has been tested to have a wall thickness of 87 1/2% (or greater) in comparison to new pipe.	<input type="checkbox"/> Add COA	
xx)	(Freeform Box)	<input type="checkbox"/> Add COA	

Operator:

Operator Name

Date: 9/16/2010

Well Name/Number:

Joe Creek 4-26-4-12

Location:

NENE 26-T4S-R12W USB

Lease Number: 14-20-H62-1520

UTU-88666

Agreement Name (If Applicable):

N/A

Exploratory:

YES

I. Background:

Onshore Oil and Gas Order No. 2, *Drilling Operations*, provides for the addition of pressure control and/or kick detection equipment in "abnormal pressure" situations, or to upgrade 5M Stacks. The following calculation can be used to determine if such drilling conditions are likely. This procedure should not be utilized by itself, but in conjunction with a review of local issues such as: the proposal is an exploratory well, the presence of H<sub>2</sub>S formations, layered high pressure zones, offset well pressures, etc.

This procedure assumes an "evacuated hole" situation. Although a worst case scenario, the concept lends itself to "borderline" situations. It is assumed that the evacuated hole actually contains a fluid composed of a mixture composed of typical hydrocarbon gases. Although the gas density, based upon molecular weight, varies from 0.12 to 0.13 psi/foot, the 0.13 psi/foot value is utilized as an acceptable average for pressure control calculations by well control companies, and is appropriate for this calculation.

Each case shall be based on the merits of the particular situation utilizing data available to establish a credible anticipated bottom hole pressure (ABHP) and formation gradient from the operator's proposal, anticipated mud weights, offset well information, or other sources. Determine the Anticipated Surface Pressure (ASP) utilizing the 0.22 psi/ft calculation. Then utilize the following to determine the Evacuated Hole Surface Pressure (EHSP):

II. Calculation:

EHSP = ABHP - (0.13 \* TVD)

EHSP = 1820 psi

\*\*EHSP Does Not Exceed the working pressure of the approved BOPE system.

The following equipment Is Not Necessary.

Item		COA ?
1)	Third Pipe Ram - Section III.A.2.a.iv.5M Requirements	<input type="checkbox"/> Add COA
2)	Remote kill line tested to stack pressure (which shall run to the outer edge of the substructure and be unobstructed) - Section III.A.2.a.iv, 5M Requirements .	<input type="checkbox"/> Add COA
3)	Electronic/mechanical mud monitoring equipment, which shall include: pit volume totalizer (PVT), stroke counter, and flow sensor - Section III.C.3.	<input type="checkbox"/> Add COA
4)	Trip Tank - Section III.C.5.	<input type="checkbox"/> Add COA
5)	Gas Detection Equipment installed in the mud return line (for exploratory wells and upgraded 5M and up) - Section III.C.6a.	<input type="checkbox"/> Add COA
6)	Hydrogen Sulfide Monitoring Equipment - Section III.C.6b.	<input type="checkbox"/> Add COA
7)	Mud gas separator (gas buster) installed and operable at least 500 feet above any hydrocarbon zone of interest - Section III.C.8.	<input type="checkbox"/> Add COA

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## CONDITIONS OF APPROVAL

**Operator:** Operator Name  
**Well Name/Number:** Joe Creek 4-26-4-12  
**Location:** NENE 26-T4S-R12W USB  
**Lease Number:** UTU-88666  
**Agreement Name (If Applicable):** N/A

Date: 9/16/2010

### I. Please Note:

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR parts 3100, 3160 and 3180), lease/agreement terms, Onshore Oil and Gas Orders, Notice to Lessee's, and this approved plan of operation.

A copy of the approved application and these conditions shall be maintained on location during all construction and drilling operations. Deviation from the approved plan without prior approval is not allowed.

The operator is fully responsible for the actions of his subcontractors.

Operators have the responsibility to assure that activities authorized by this permit are conducted in a manner that complies with other applicable Federal, State, and local laws and regulations.

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

This Application for Permit to Drill (APD) shall be valid for **two years** from the date of approval, provided the lease does not expire. If activities have not commenced by the end of the two-year period, the APD shall be returned to the operator without prejudice. Should the operator still desire to drill the well, a new APD must be submitted to this office. Upon written request by the operator, a one-time **two year** extension to this time period may be granted by the Authorized Officer (AO).

Failure to comply with the provisions of this permit, including applicable regulations, stipulations, and/or approval conditions, will be considered a violation subject to the enforcement provisions of 43 CFR Subpart 3163.

If fill materials are needed to maintain roads or well sites, proper permits must be obtained from the appropriate surface owner. On BLM administered lands, the use of materials shall conform with 43 CFR §3610.2-3.

### II Required Notifications:

The operator and contractor shall contact the BLM, Fillmore Field Office - **(435) 743-3126**, at least 48 hours prior to commencement of access and site construction or reclamation activities. (Contact: **George Cruz**).

The operator shall contact the BLM, Utah State Office, Branch of Fluid Minerals, **(801) 539-4048**, FAX (801) 539-4261, at least 24 hours prior to the following operations (Contact: **Randy Knight**):

- |  |  |
|--|--|
| • spudding (including dry hole digger or rig hole rigs);                     |  |
| • running and cementing all casing strings;                                  |  |
| • pressure testing of BOPE or any casing string.                             |  |
| • pressure integrity test (mud weight equivalency test) of each casing shoe. |  |

In the case of newly drilled dry holes, and in any emergency situation, after hour authorization may be obtained by contacting the following individuals, **in the order listed**:

Al McKee	(801) 572-6911 (Home)				
Petroleum Engineer	(801) 828-7498 (Cell)				
Utah State Office	al_mckee@blm.gov				
Randy Knight	(801) 699-0405 (Cell)				
I&E Coordinator	(801) 539-4048 (Office)				
Utah State Office	randy_knight@blm.gov				

### III. Conditions of Approval:

**A. Drilling Plan** - The Nine Point Plan of the Application for Permit to Drill will be supplemented as follows:

- 1) Onshore Order No. 2, *Drilling Operations*, requires that all formations containing usable quality water (less than 10,000 ppm) be protected via cement. If encountered while drilling, usable quality water would require protection by bring the cement at least  $\pm 100'$  above the usable quality water zone.
- 2) Approval is based on a **5M** BOPE utilized after setting surface casing. All components, including the annular preventer, shall be rated to this pressure rating.

3)	Daily drilling and completion progress reports shall be submitted to the BLM, Utah State Office, Branch of Fluid Minerals, at P.O. Box 45155, Salt Lake City, Utah, 84145-0155 (electronically to <a href="mailto:al_mckee@blm.gov">al_mckee@blm.gov</a> ) and to the BLM, Fillmore Field Office, 35 East 500 North, Fillmore, Utah 84631 on a <b>weekly</b> basis, and shall include daily mud reports.
4)	No variances were requested nor approved from the minimum standards of Order Nos. 2 and 6.
5)	If unanticipated H2S in excess of 100 ppm in the gas stream is encountered, the operator shall immediately ensure control of the well, suspend drilling operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with the applicable provisions of Order No. 6. In addition, the operator shall notify the authorized officer of the event and the mitigating steps that have or are being taken, as soon as possible, but no later than the next business day. If said notifications are subsequent to actual resumption of drilling operations, the operator shall notify the authorized officer of the date that drilling was actually resumed. It is the operator's responsibility to provide, if necessary, a H2S DOP and a PPP to the authorized officer for approval within five business days following resumption of drilling ahead operations.
6)	Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Authorized Officer (AO). All conditions of this approval shall be applicable during any operations conducted with a replacement/completion rig.
7)	Two copies of all logs, and a single copy of core descriptions, core analyses, drill stem tests, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling and/or completion operations shall be submitted to the BLM, Utah State Office, Branch of Fluid Minerals, at P.O. Box 45155, Salt Lake City, Utah, 84145-0155.
8)	Gas produced from this well may not be vented or flared beyond an initial authorized test period of 30 days or 50 MMCF following its completion, whichever comes first, without the prior written approval of the authorized officer. Should gas be vented or flared without approval beyond the authorized test period, the operator may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted and the operator shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.
9)	Section 102 (b) (3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1 (c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed."
<b>B. Surface Use Plan of Operations - conditions – Ensure any waive exception language is included.</b>	
	The 13 Point Plan of the Application for Permit to Drill will be supplemented as follows.... Insert BLM SUPO COAs....

## DOWNHOLE APD CHECKLIST

**Operator:** Operator Name  
**Well Name/Number:** Joe Creek 4-26-4-12  
**Location:** NENE 26-T4S-R12W USB  
**Lease Number:** UTU-88666  
**Agreement Name (If Applicable):** N/A

**Date:** 9/16/2010

	<u>YES</u>	<u>NO</u>
Estimated Tops of All Formations and Important Markers, Beginning with the Surface Fm.....	<input checked="" type="radio"/>	<input type="radio"/>
Estimated Depths of Anticipated Water,		
Oil, Gas, or other Important Minerals.....	<input type="radio"/>	<input type="radio"/>
If Identified Above, Plan for Protection.....	<input type="radio"/>	<input type="radio"/>
Minimum Specifications for Pressure Control.....	<input type="radio"/>	<input type="radio"/>
BOPE Size, Pressure Rating, and Configuration/ Schematic Diagram.....	<input type="radio"/>	<input type="radio"/>
BOPE Testing Procedures and Frequency.....	<input type="radio"/>	<input type="radio"/>
Proposed Casing Program; Including Size, Grade, Weight, Type, Setting Depth,		
New vs. Used, Loading Assumptions, Safety Factors, & Hole Size.....	<input type="radio"/>	<input type="radio"/>
Amount & Type of Cement, Including Additives.....	<input type="radio"/>	<input type="radio"/>
Type & Characteristics of Mud System; Quantities,		
Weighting Material, & Monitoring Equipment.....	<input type="radio"/>	<input type="radio"/>
Air/Gas Drilling – Length of Blooie Line,		
Compressor Equipment Location, & Mud/Kill Medium.....	<input type="radio"/>	<input type="radio"/>
Testing, Logging, and Coring Procedures.....	<input type="radio"/>	<input type="radio"/>
Expected BHP.....	<input type="radio"/>	<input type="radio"/>
Abnormal Pressures or Hazards.....	<input type="radio"/>	<input type="radio"/>
Directional Design, Plan View, & Vertical section in TVD & MD.....	<input type="radio"/>	<input type="radio"/>
Other Facts/Supplementary Information.....	<input type="radio"/>	<input type="radio"/>

REMARKS/NEEDED INFORMATION: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: 9/16/2010

Operator: **Operator Name**  
 Well Name & Number: **Joe Creek 4-26-4-12**  
 Location: **NENE 26-T4S-R12W USB**  
 Lease Number: **UTU-88666**  
 Agreement: **N/A**

Name: **rttc**  
 Date: **9/16/2010**

Comments: **Top of Ferron SS est. @ 669' - proj. TOC behind 5 1/2" @ surf.**  
**Air drill prod. hole, normal bottom hole pressures anticipated**  
**Proposed casing design falls within safety factor considerations**

#### Casing Design Calculations

Type of Casing	Size of Hole (Inches)	Size of Casing (Inches)	Weight per Foot (lbs/ft)	Grade	Thread	Interval (ft-ft)	Length (feet)	Setting Depth (feet)	Collapse (psi)	Burst (psi)	Tension (psi)	Cement Volume (sacks)
Surface	12.250	9.625	40.0	N-80	ST&C	0-2300	2300	2300	3090	5750	737000	340
Intermediate	8.750	7.000	29.0	P-110	LT&C	0-7656	7656	7656	8510	11220	797000	360
Production	6.125	4.500	13.5	P-110	LT&C	7656-10500	2844	10500	10670	12410	338000	220

Total Depth	10500 feet	Max. MW	8.4 lbs/gal	Surface casing shoe
BHP	6279 psi	HP	1005 psi	Surface casing shoe
Gradient	0.60 psi/ft << Provided	Max. MW	8.9 lbs/gal	Intermediate casing shoe
Max. Surf. Pressure	3969 psi	HP	3543 psi	Intermediate casing shoe
BOP Required	5M System	Max. MW	11.0 lbs/gal	Production casing shoe
		HP	6006 psi	Production casing shoe

#### SAFETY FACTORS

Surface	Pb=	3.093	Min=	1.000 OK>MIN
Casing	Pc=	2.889	Min=	1.125 OK>MIN
	Si=	8.011	Min=	1.600 OK>MIN
Intermediate	Pb-1=	2.827	Min=	1.000 OK>MIN
Casing	Pc-1=	3.151	Min=	1.125 OK>MIN
	Si-1=	3.590	Min=	1.600 OK>MIN
Production	Pb-2=	2.195	Min=	1.000 OK>MIN
Casing	Pc-2=	2.200	Min=	1.125 OK>MIN
	Si-2=	8.803	Min=	1.600 OK>MIN
	Si-2=	10.582	Min=	1.800 OK>MIN

31940 buoyancy weight

#### Cement Volume Calculations

Surface	12.250 by	9.625	=	0.3132 cu ft/ft	LEAD	TAIL	Top of Tail ft.	Top of Lead
Casing	Yield per sack		=	2.91 cu ft/sx	240	100	1598	-855
(Cement to Surface)	Number of sacks		=	372 sacks	3.2	2.2		
					OK			
Intermediate	8.750 by	7.000	=	0.1503 cu ft/ft	LEAD	TAIL	Top of Tail ft.	Top of Lead
Casing	Yield per sack		=	3.06 cu ft/sx	310	50	6924	325
(Min cement top=	Number of sacks		=	333 sacks	3.2	2.2		
2000 ft)					OK			
Production	6.125 by	4.500	=	0.0942 cu ft/ft	LEAD	TAIL	Top of Tail ft.	
Casing	Yield per sack		=	1.86 cu ft/sx		220	6155	
(Min cement top=	Number of sacks		=	154 sacks		1.86		
7456 ft)					OK			

# **Newfield Production Company**

## **Monument Butte APD's**

### **Uintah/Duchesne County Utah**

**I have reviewed the APD well location plat and found the surface location not in compliance with the State of Utah Rule 649-3-3 requirements. A spacing exception request letter is contained in the APD. A geological review has been conducted of Items 1& 2 contained in the drilling plan of the APD's. Items 3-9 of the drilling plan are not contained in the APD's but have a statement referencing the Newfield Production Co. Monument Butte Field Standard Operating Procedures (SOP version: June 24, 2008).**

**Newfield Production Co. shall adhere to all referenced requirements in the SOP along with all Oil and Gas rules and requirements listed in the Code of Federal Regulations and all Federal Onshore Oil and Gas Orders.**

**Ryan Angus  
Petroleum Engineer  
BLM Vernal Field Office**

## Engineering Review Spreadsheet V 1.0 –

This effort is designed to standardize the downhole review of all Utah BLM reviewed APDs. After the review is completed, the record needs to be documented. This review and documentation will include at a minimum: deficiency list, casing and cementing review and engineering evaluation with specific COAs.

The Engineering Review Spreadsheet contains more tabs than any single review will require. For example, the H2S checklist need only be utilized for those wells which meet or exceed the criteria of Order #6. Due to unique field office issues, separate tabs are in place for casing and cementing reviews. Additional tabs may be added as necessary.

**9-Pt Checklist** is directly from minimum standards contained in Order No 1 and utilizes checkboxes to track deficiencies, adequacy and necessary COAs. This will be necessary for all wells.

**H2S Checklist** is a similar checklist for Onshore Order No 6. This will be necessary for all wells which meet the applicability criteria established in Order No. 6, *Hydrogen Sulfide Operations*.

**Csg – USO** version will be utilized for all over-thrust and geothermal wells. Optional for Green River District.

**Eng Eval** is the spreadsheet which will be utilized to document the engineer review of the casing and cementing program and establish necessary COAs.

**Abnormal Pressure** calculates “abnormal pressure” as described in Order No 2. This will be utilized to determine when additional pressure control equipment is required for 5M stacks and above.

**Standard COAs - Example** is where your office's typical (standard) COAs are documented. This tab currently contains the USO version. Each District will upload their standard COAs to separate tabs and provide a final version to USO.

**Green River - Checklist** is optional as all information required by Order No 1 is included in

**Green River - CSG** is the VFO and PFO casing and cementing worksheet.

**Green River – SOP** is a specific example of a SOP letter which VFO utilizes. Because the SOP is based upon a previous engineering review, it needs to be documented in the individual case file. Similar SOPs can be added as separate tabs as necessary.